

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application.

Claims 1-22 are now present in this application. Claims 1, 6, 11, 17 and 18 are independent.

Amendments have been made to the Abstract of the Disclosure, claims 1, 6, 10, 11 and 14 are amended, and claims 17-22 are added. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicant thanks the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Drawings

Applicant acknowledges, with appreciation, the indication in the Office Action that the drawings filed on December 6, 2001 have been accepted.

Objection to the Title of the Invention

The Office Action objects to the title as not being descriptive. Applicant respectfully traverses this objection. The objection fails to explain why the current title is not descriptive. The current title clearly indicates that the invention concerns a media access control frame structure in a cable network as well as a data communication method in a cable network. Applicant respectfully submits that this clearly indicates that the application is directed to both an apparatus and a method of use in a cable network, that the apparatus concerns a media access control frame structure, and that the method is a data communication method.

Nevertheless, Applicant will be fully receptive to any suggestions that the Examiner may make in this regard.

Reconsideration and withdrawal of this objection are respectfully requested.

Objection to the Abstract of the Disclosure

The Abstract is objected to for being too long. This objection is respectfully traversed based on the revised Abstract of the Disclosure, set forth below, which is shorter than 150 words.

Reconsideration and withdrawal of this objection are respectfully requested.

Specification Objection

The Examiner has objected to the specification because page 10, line 19 indicates that extended header types 7 through 9 are defined in the present invention, but there is no further description of header 9 in the specification. This objection is respectfully traversed.

Applicant respectfully submits that this originally filed Application clearly discloses that “[E]ach of the 3 extended header types 7 through 9 is selected corresponding to the service flow in each direction” and that “[T]he extended header types are realized to have the function of changing the PHS rule like in dynamic service change (DSC) signaling processes.” See, in this regard, the last paragraph on page 10 of the main body of applicant’s specification.

While one exemplary embodiment of the devices and systems of Applicant’s invention shows using extended types 7 and 8 – see, for example, Figs. 4 and 6 – clearly, extended type 9 can be used, as well, to “have the function of changing the PHS rule like in dynamic service change (DSC) signaling processes” in other exemplary embodiments of Applicant’s invention.

Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 101

Claims 1-5 stand rejected under 35 USC §101 as being directed to data structures, which is alleged to be non-statutory subject matter. This rejection is respectfully traversed.

Claims 1-5, as amended, does not recite a datap structure, *per se*. As amended, claims 1-5 positively recite a cable network for using data packets having a media access control frame

structure to initialize payload header suppression of transmitted data packets through extended header types, which is clearly patentable subject matter under 35 USC §101.

Reconsideration and withdrawal of this rejection of claims 1-5 are respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 1-5 stand rejected under 35 U.S.C. § 102(a) as being anticipated by admitted prior art, which is shown as conventional art in Fig. 1. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

Claim 1, as amended, positively recites a cable network, comprising (1) a cable modem (CM) for transmitting and receiving data; and (2) a media access control frame structure in the cable network to initialize payload header suppression of transmitted data packets through extended header types, the media access control frame structure comprising (a) a medium access control header including various extended header types according to a service flow of data packets between a sender and a receiver over the cable network to be inserted in a payload data unit to initialize a payload header suppression rule; and (b) a payload data unit comprising payload header suppression parameters other than those defined in the various extended header types according to a payload header suppression rule to permit initialization of payload header suppression using the defined PHS rule parameters in the various extended header types and the payload header suppression parameters in the payload data unit other than those defined in the various extended header types. This combination of features is nowhere to be found in Applicant's Fig. 1, although it is disclosed in this Application, e.g., on pages 6-14 and in Figs. 2-6.

Moreover, as discussed in the paragraph bridging Applicant's pages 11 and 12, when the PHS rule is partially generated, the PHS rule is completely defined using the DSC signaling processes, whereas in the present invention, the PHS rule parameters are inserted into the PDU to initialize payload header suppression through the extended header types.

Accordingly, the invention recited in claims 1-5 is not disclosed or anticipated by the conventional art disclosed by Applicant.

Reconsideration and withdrawal of this rejection of claims 1-5 under 35 USC §102(a) are respectfully requested.

Claims 6, 7, 9, 11, 15 and 16 stand rejected under 35 U.S.C. § 102(e) as being anticipated by US 2002/0073227 to Bunn et al. ("Bunn"). This rejection is respectfully traversed.

During patent examination the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444(Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788(Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent.

Applicant respectfully submits that the PTO has failed to meet this burden.

A prior art reference anticipates the subject matter of a claim when that reference discloses every feature of the claimed invention, either explicitly or inherently. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and *Hazani v. Int'l Trade Comm'n*, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed Cir. 1997). While, of course, it is possible that it is inherent in the operation of the prior art device that a particular element operates as theorized by the examiner, inherency may not be established by probabilities or possibilities. *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Bunn is directed to suppressing redundant fields in a full TCP protocol packet when subsequent TCP protocol packets are transmitted across a DOCSIS network. Bunn delta-encodes non-redundant fields in the TCP protocol packet using a delta-encoded value when subsequent TCP protocol packets are transmitted, where the delta-encoded values represent the change in value from the previous TCP packet for the non-redundant field.

The Office Action asserts that paragraphs [0099] and [0100] of Bunn disclose the claimed invention.

Applicant respectfully disagrees for a number of reasons.

Firstly, paragraph [0099] merely discloses that Bunn places an extended protocol support descriptor in a vendor-specific information field of a REG-REQ message. There is absolutely no explicit disclosure that Bunn's extended protocol support descriptor is an EH_TYPE packet, or that the vendor-specific information field of Bunn's REG-REQ message is an EHDR PART of a MAC header. Nor is there any objective factual evidence presented in the Office Action to show, on a *prima facie* basis, that Bunn inherently (i.e., necessarily) discloses that Bunn's extended protocol support descriptor is an EH_TYPE packet, or that the vendor-specific information field of Bunn's REG-REQ message is an EHDR PART of MAC header. Furthermore, the Office Action does not explain what Bunn's extended protocol has to do with the claimed extended header types.

Secondly, Bunn is directed to determining whether the extended protocols are supported and, in order to determine this, Bunn has to retransmit the UDP message a predetermined number of times to determine if any extended protocols are supported. The Office Action fails to explain what this has to do with the claimed invention, let alone anticipate, the claimed invention, which is not directed to determining if extended protocols are supported, but is directed to reducing signaling processes required in case a cable modem wishes to change the header format of a suppressed packet – a feature not demonstrated to exist in Bunn.

Further, regarding claim 7, Applicant respectfully submits that claim 7 does not recite what paragraph [0100] of Bunn, lines 1-4, allegedly discloses, i.e., claim 7 does not recite whether or not an extended protocol is supported.

Similar comments apply to the rejection of claims 9, 15 and 16, none of which recites whether an extended protocol is supported.

Accordingly, the Office Action fails to make out a *prima facie* case of anticipation of the claimed invention by Bunn.

Reconsideration and withdrawal of this rejection are respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 8, 12 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bunn in view of Platt. This rejection is respectfully traversed.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole", not just a few features of the claimed invention. Under 35 U.S.C. §103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under section 103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the Examiner must explain what the differences between the claimed invention and the prior art are and provide objective factual evidence to support a conclusion that it would be obvious to one of ordinary skill in the art to achieve the claimed invention, which includes those missing features.

In the second place, in rejecting claims under 35 U.S.C. §103, it is incumbent on the examiner to establish a factual basis to support the legal conclusion of obviousness. See, *In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. *Uniroyal Inc. v. F-Wiley Corp.*, 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art

suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See *In re Dembiczak*, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, a factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, *In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Initially, the rejection is improper because it is stated to be based on “Platt et al.” but does not list any Platt et al. reference on the Form PTO-892 (Notice of References Cited) and does not refer to any portion of Platt in the body of the rejection.

Applicant respectfully requests that the examiner identify the “Platt et al.” reference in the next Office Action, and indicate how it is applied in this rejection.

In an attempt to be fully responsive to the outstanding Office Action, Applicant presents the following remarks.

Bunn does not anticipate claim 1, from which claim 8 depends, and does not anticipate claim 11, from which claims 12 and 13 depend, for reasons set forth above. The Office Action also fails to present any arguments to remedy the aforementioned deficiencies.

Regarding claims 8 and 12, the Office Action admits that Bunn does not disclose a CM transmitting a message a predetermined number of times if no response is received. However, this is not what is claimed. Claims 8 and 12 recite that the sender continuously transmits the first

EH_TYPE to the receiver until the second EH_TYPE packet is received from the receiver. Bunn fails to disclose this positively claimed feature. Instead of addressing this claimed feature, the Office Action merely speculates, without providing any objective factual evidence in support thereof, as required by the aforesighted case law, addresses whether it would be obvious to have a cable modem (CM) initiate and perform the process of checking the supportability of an extended protocol. Not only is the rejection improper because no objective factual evidence is presented to support this proposed modification of Bunn, but the proposed modification of Bunn has not been shown to be related to the claimed invention, i.e., the Office Action fails to show why having a cable modem (CM) to initiate and perform the process of checking the supportability of an extended protocol anticipates the sender continuously transmitting a first EH_TYPE to the receiver until a second EH_TYPE packet is received from the receiver.

With respect to claim 13, which recites a combination of features including a step of determining that the receiver cannot support the new payload header suppression rule when the second EH_TYPE packet is not received from the receiver for a predetermined time, Applicant respectfully submits that the Office Action fails to provide any objective factual evidence that providing such a step would be obvious and, instead, merely speculates that such a step would be obvious, contrary to the explicit requirements to provide such objective factual evidence in the case law cited above. Moreover, the Office Action fails to demonstrate by objective factual evidence that a cable modem determining whether an extended protocol is supported has anything to do with the claimed invention.

Nor has the Office Action provided any objective evidence of proper motivation to modify Bunn to arrive at, or otherwise render obvious, the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 8, 12 and 13 are respectfully requested.

New Claims 17-22

Claim 17 has been added. Claim 17 recites a method of using a media access control frame structure in a cable network to initialize payload header suppression of transmitted data packets through extended header types. Basis for the claim is found in originally presented claim 1, which recited the frame structure, per se, use of which is clearly disclosed in Applicant's originally filed application. Claim 17 is respectfully submitted to be allowable at least for the reasons that amended claim 1, that recites a cable network with the claimed media access control structure is patentable, as discussed, above.

Claims 18-22 are also added. Claims 18-22 recite a media access control structure embodied on a computer readable medium, which is statutory subject matter that clearly complies with 35 USC §101. Support for these claims is found in the originally filed specification and, e.g., Fig. 6, which disclose cable network features which necessarily include computer readable media, including the memory elements of the cable network elements. Claims 18-22 are respectfully submitted to be allowable at least for the reasons that amended claim 1 is patentable, as discussed above.

Allowable Subject Matter

The Examiner states that claims 10 and 14 would be allowable if rewritten in independent form.

Applicant thanks the Examiner for the early indication of allowable subject matter in this application. Applicant has re-written claims 10 and 14 in independent form to place them in condition for allowance.

Additional Cited References

Because the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

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Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Applicant also respectfully requests clarification of the basis for the rejection of claims 8, 12 and 13 under 35 USC §103(a).

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone James T. Eller, Jr., Registration No. 39,538, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Abstract of the Disclosure